

Animation Worksheet: One Way Roller Clutch

Name: _____ Date: _____

1. In an automatic transmission, a one-way roller clutch is used to allow free rotation in one direction, typically during specific gear shifts or when _____.
2. The clutch will lock up and transfer _____ in the opposite direction when the vehicle is accelerating or engine braking.
3. The one-way roller clutch is designed to automatically engage and disengage without needing any electronic or _____ control.
4. The main components of this clutch system include the rollers (or sprags), the outer race, and an inner race, which can be a gear or a _____.
5. The outer race of the clutch can be a stationary housing or a surrounding _____.
6. When the inner race rotates _____, the shape of the cam surfaces allows the rollers to roll freely without jamming.
7. When the inner race spins independently without transmitting power to the outer race, this behavior is called overrunning or _____.
8. When the inner race tries to rotate counterclockwise, the rollers are forced into _____ gaps between the races.
9. Under counterclockwise rotation, the jammed rollers create a solid, _____ connection.
10. Once the clutch locks up under counterclockwise force, the inner race cannot spin on its own and must move with the _____ race.